

## **REMARKS**

Claims 1–32 are pending and under consideration.

In the Office Action, Claims 1–32 were rejected.

In this Amendment, Claims 1, 5, and 12–13 are amended, and Claims 15–28 are cancelled.

Accordingly, Claims 1–24 and 29–32 are now at issue.

### **I. 35 U.S.C. § 112 Indefiniteness Rejection of Claims**

Claim 1 has been appropriately amended to remove the objection.

The rejection of Claim 3 is now moot in view of the amendment to Claim 1.

Accordingly, Applicants request that the claim objections be withdrawn.

### **II. 35 U.S.C. § 102 Anticipation Rejection of Claims**

Claims 15–28 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Kelley et al.* (U.S. Patent No. 6,080,501).

This claim rejection is now moot in view of the cancellation of Claims 15–28.

### **III. 35 U.S.C. § 103 Obviousness Rejection of Claims**

Claims 1–14 and 29–31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelley et al. (“Kelley”) and further in view of Bass et al. (“Bass”) (U.S. Patent No. 6,001,500). Although, Applicants respectfully traverse this rejection, Claim 1 has been amended to clarify the invention and remove any ambiguities that may have been the basis for this rejection.

Claim 1 is directed to an electrochemical device. The electromechanical device comprises a fuel electrode, an oxygen electrode, an ion exchange membrane, and a fuel source.

As amended, Claim 1 recites that “said fuel source is surrounded by said fuel electrode in a state being in contact with said fuel electrode.”

None of the cited references, either alone or in combination, teaches or discloses forming a fuel electrode and a fuel source which constitute a fuel electrode assembly in a state being in contact with each other, wherein said fuel electrode assembly is surrounded by an ion exchange

membrane in a state being in contact with said ion exchange membrane, and wherein said fuel source is surrounded by said fuel electrode in a state being in contact with said fuel electrode.

By forming such a structure, the fuel source is able to absorb and support hydrogen, which has been externally supplied therein and supply the hydrogen to the fuel electrode. By forming said structure, the electrochemical device of the present invention does not require a fuel supply apparatus which is to be additionally provided outside the fuel cell for supplying fuel into the fuel cell, since said fuel is already contained in said fuel source.

None of the references teach or disclose such a structure. For example, while Bass teaches a fuel cell having an innermost layer 34, said innermost layer 34 is preferably made from a stainless steel screen or cloth which has been welded otherwise converted into a cylindrical shape. Bass does not teach or disclose using anything other than a stainless steel screen or cloth for said innermost layer 34. Moreover, Bass states that “the innermost layer 34 serves as an electrical current collector, and it is important to establish good contact between the innermost layer 34 and the second layer 36, which is the anode of the fuel cell.” Furthermore, Bass does not teach or disclose combining a fuel source within said innermost layer 34.

Thus, Bass requires that the innermost layer 34 *be in a state being in contact* with the anode layer 36. That is, Bass teaches away from the claimed structure that the fuel source be surrounded by the fuel electrode *in a state being in contact* with each other.

Thus, Claim 1 is allowable over the cited references, as are dependent Claims 2–11, and 29–31.

In regard to Claims 12–14, independent Claims 12 and 13 have been amended in a similar fashion to Claim 1. Thus, Claims 12 and 13 are allowable, as is Claim 14 which depends on Claim 13.

Accordingly, Applicants respectfully request that these claim rejections be withdrawn.

#### **IV. 35 U.S.C. § 103 Obviousness Rejection of Claims**

Claim 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kelley et al. (“Kelley”) and further in view of Bass et al. (“Bass”) (U.S. Patent No. 6,001,500) and further in view of Hinokuma et al. (“Hinokuma”) (U.S. Patent No.: 6,495,290).

Claim 32 depends indirectly on allowable Claim 1. Thus, Claim 32 is allowable over the cited references, singly or in combination with each other.

**V. Conclusion**

In view of the above amendments and remarks, Applicant submits that Claims 1–14, and 29–32 are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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